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# TECHNICAL NOTES

## LAKE STATES FOREST EXPERIMENT STATION U.S. DEPARTMENT OF AGRICULTURE · · FOREST SERVICE

No. 568

### Defect in Wisconsin Timber

Defect of merchantable trees in Wisconsin averages  $2\frac{1}{2}$  to 3 times as high for the saw-log portion of sawtimber-size trees as for poletimber trees. Expressed as a percent of gross volume, the State average defect ranges from 1 to 6 percent for poletimber and from 6 to 17 percent for sawtimber (table 1).

During the second timber inventory of Wisconsin, defect from all causes was observed in trees on 13,665 one-fifth acre survey plots which were well scattered throughout the State's commercial timberland.<sup>1/</sup> Estimates, based on observations of external defect indicators, were made for all live merchantable trees. Defect in cull trees (trees 60 percent or more unusable) was not included. Since the amount of a tree that is usable varies with the end product, it was assumed that poletimber-sized trees would be cut for pulpwood and that sawtimber trees would be bucked into saw logs.

Poletimber defect varied little by district, and averaged about 3 percent for the softwood species and about 5 percent for the hardwood species.

Sawtimber defect showed wide variations by district. The lowest defect was found in central Wisconsin, the highest in southeastern Wisconsin (figure 1). The low defect percent for sawtimber in central Wisconsin is correlated with low average diameters brought about by heavy cutting. In southern Wisconsin the high defect in sawtimber is associated with larger, older trees left after intermittent cutting of the better trees in farm woodlots. High grading and lack of cutting both accumulate defective trees. Heavy grazing, which encourages root and butt rot through bruises on roots and lower stems, is common in this district and has undoubtedly increased the defect.

Defect percents indicate the reduction of present merchantable volumes and the loss of new growth accruing on defective parts of trees.

<sup>1/</sup> Conducted by the Wisconsin Conservation Department, the Lake States Forest Experiment Station, and certain counties and forest industries from 1950-57.

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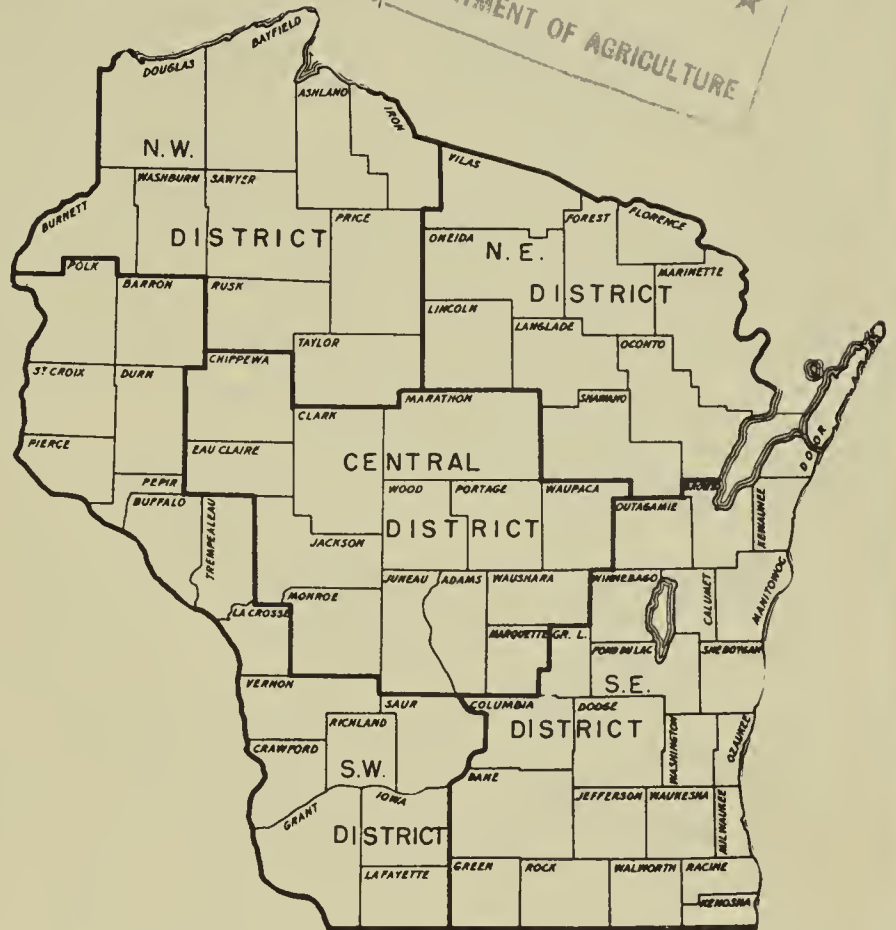


Figure 1.--Wisconsin Forest Survey Districts.

Table 1.--Defect in Wisconsin timber, 1956

Species	Poletimber trees	Sawtimber trees by district					
		State	North-	North-	Central	South-	South-
		average	east	west		east	west
<u>In Percent</u>							
<u>Softwoods</u>							
White pine	3	7	8	7	4	12	8
Jack pine	2	6	10	4	5	8	5
Hemlock	4	11	11	14	-	-	-
Spruce	1	-	-	-	-	-	-
Balsam fir	3	-	-	-	-	-	-
Cedar	5	-	-	-	-	-	-
<u>Hardwoods</u>							
Aspen	6	14	14	13	9	25	19
Sugar maple	5	15	14	16	12	27	15
Soft maple	5	12	13	15	9	26	20
Yellow birch	5	15	14	18	13	21	15
Basswood	4	11	9	11	8	32	16
Elm	4	12	8	9	6	22	15
Red oak	4	14	19	12	8	23	14
Black oak	5	17	-	-	11	25	25
White oak	5	16	4	14	8	28	17
Ash	4	12	9	12	7	19	12
White birch	4	-	-	-	-	-	-